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*New results on polynomial  $\chi$ -boundedness*

The number of colours required to colour a graph  $G$  (the chromatic number  $\chi(G)$ ) is at least its clique number, that is, the maximum size of a set of pairwise adjacent vertices. A class of graphs is  $\chi$ -bounded if the converse is approximately true, that is, the chromatic number is at most some function of the clique number. In this talk, we are interested in when this function can be chosen as a polynomial. I will discuss some recent results in the case of forbidding a single graph as an induced subgraph.

Joint work with Alex Scott and Paul Seymour.